

Lebbeus groenlandicus* (Spiny Lebbeid Shrimp)*Priority 2 Species of Greatest Conservation Need (SGCN)****Class:** *Malacostraca* (Crustaceans)**Order:** *Decapoda* (Decapods)**Family:** *Hippolytidae* ()**General comments:** none**No Species Conservation Range Maps Available for Spiny Lebbeid Shrimp****SGCN Priority Ranking - Designation Criteria:****Risk of Extirpation:** NA**State Special Concern or NMFS Species of Concern:** NA**Recent Significant Declines:**

Spiny Lebbeid Shrimp is currently undergoing steep population declines, which has already led to, or if unchecked is likely to lead to, local extinction and/or range contraction.

Notes:

recent decline - last record in Cobscook Bay 1979; climate change - Arctic Province species; understudied - little known about this species, professional judgement

Regional Endemic: NA**High Regional Conservation Priority:** NA**High Climate Change Vulnerability:**

Lebbeus groenlandicus is highly vulnerable to climate change.

Understudied rare taxa:

Recently documented or poorly surveyed rare species for which risk of extirpation is potentially high (e.g. few known occurrences) but insufficient data exist to conclusively assess distribution and status. *criteria only qualifies for Priority 3 level SGCN*

Notes:

recent decline - last record in Cobscook Bay 1979; climate change - Arctic Province species; understudied - little known about this species, professional judgement

Historical: NA**Culturally Significant:** NA**Habitats Assigned to Spiny Lebbeid Shrimp:**

Formation Name	Subtidal
Macrogroup Name	Subtidal Coarse Gravel Bottom
Habitat System Name:	Coarse Gravel **Primary Habitat** Notes: assumed off-shore mating habitat, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore
Macrogroup Name	Subtidal Mud Bottom
Habitat System Name:	Unvegetated **Primary Habitat** Notes: feeding habitat offshore, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore
Macrogroup Name	Subtidal Pelagic (Water Column)
Habitat System Name:	Nearshore Notes: larval development and dispersal
Habitat System Name:	Offshore Notes: larval development and dispersal

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Habitat System Name: Unvegetated ****Primary Habitat**** **Notes:** *assumed off-shore mating habitat, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore*

Stressors Assigned to Spiny Lebbeid Shrimp:

Stressor Priority Level based on Severity and Actionability	Moderate Severity		High Severity	
	Highly Actionable		Medium-High	
	Moderately Actionable		Medium	
	Actionable with Difficulty		Low	

IUCN Level 1 Threat Pollution**IUCN Level 2 Threat:** Agricultural and Forestry Effluents**Severity:** Severe**Actionability:** Moderately actionable

Notes: Crustacean larvae and adults are exceptionally sensitive to excessive nutrients, toxic chemicals (including pesticides and chemical therapeutants), and/or sediments.

IUCN Level 2 Threat: Domestic and Urban Waste Water**Severity:** Severe**Actionability:** Moderately actionable

Notes: Crustacean larvae and adults are exceptionally sensitive to excessive nutrients, toxic chemicals (including pesticides and chemical therapeutants), and/or sediments.

IUCN Level 1 Threat Biological Resource Use**IUCN Level 2 Threat:** Fishing and Harvesting of Aquatic Resources**Severity:** Severe**Actionability:** Actionable with difficulty

Notes: Unintentional catch by commercial trawling reduces population size and subsequently results in local extinctions, impaired role of the functional group "predator," and subsequently results in decreased benthic diversity through trophic cascades and thus decreases the availability of food for other species.

IUCN Level 1 Threat Climate Change and Severe Weather**IUCN Level 2 Threat:** Habitat Shifting or Alteration**Severity:** Severe**Actionability:** Actionable with difficulty

Notes: Ocean acidification results in decreased survivorship of larvae, and growth and feeding by crustaceans. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.

IUCN Level 2 Threat: Temperature Extremes**Severity:** Severe**Actionability:** Actionable with difficulty

Notes: Spiny lebbeid shrimp are cold-water species. Increased water temperatures have interactive effects with ocean pH decreasing survivorship of larvae and growth rate of crustaceans. Likelihood is high (high certainty) and large scale. The ability to mitigate sea temperature change is low.

IUCN Level 1 Threat Invasive and Other Problematic Species, Genes and Diseases**IUCN Level 2 Threat:** Invasive Non-native-Alien Species-Diseases**Severity:** Moderate Severity**Actionability:** Actionable with difficulty

Notes: Invasives could have effects largely unknown at this time. Likelihood is high and large scale (throughout the region), so actionability is low.

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None. *Only species specific conservation actions that address high (red) or medium-high (orange) priority stressors are summarized here.*

Conservation Actions Associated with the Shrimp Guild:

Conservation Action	Category: Research	Biological Priority: high	Type: on-going
Develop molecular tools to identify where specimens are collected.			

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action	Category: Survey and Monitoring	Biological Priority: high	Type: on-going
Ground-truth mapped habitat and compare to historical maps to monitor change over time, may require updating mapping plans to map more frequently			

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action	Category: Policy	Biological Priority: critical	Type: on-going
Through education and collaboration, reduce the use of antifouling agents and biocides that negatively affect SGCN, and investigate alternative biofouling agents.			

Stressor(s) Addressed By This Conservation Action

Agricultural and Forestry Effluents

Conservation Action	Category: Research	Biological Priority: high	Type: on-going
Expand existing education and research among researchers and managers to improve understanding and close data loopholes in order to inform management			

Stressor(s) Addressed By This Conservation Action

Domestic and Urban Waste Water

Broad Taxonomic Group Conservation Actions:

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-1.

Habitat Based Conservation Actions:

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-15. Click on the Habitat Grouping of interest to launch a habitat based report summarizing relevant conservation actions and associated SGCN.

The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, stressors, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work programs and priorities by state agencies and partners.